

coral reef, a quarter of a mile or so back from the present beach at Waikiki, and in the dredgings used as ballast on the railroad between Pearl City and Waipio, in both cases plainly fossil. Dr. Dall writes that he considered this the same species as *Trapezium duperryi* Desh., 1841. Common sense suggests that Conrad's misleading specific name should be discarded in favor of Deshayes' later one, but the rule of priority seems to stand in the way. This also applies to *Perna californica*.

In a brief walk along the railroad tracks east of Waipio we obtained from the ballast 67 species of mollusks, all or nearly all of which are still living along the coast of the island. In the dredgings said to have come from 20 to 30 feet deep in the coral far inland at Waikiki we obtained just 100 species. In the railroad cut east of Waipio, 15 or 20 feet above the present high-tide line, we found a thick deposit composed almost entirely of *Ostrea retusa* "Pease" Sowerby, a species that, so far as we learned, is not now living on the island. This is not kitchen-midden material, but a true fossil deposit *in situ*.

NEW VARIETIES OF STAGNICOLA FROM WISCONSIN AND WYOMING

BY FRANK C. BAKER¹

During the preparation of the manuscript for the Monograph of the Fresh Water Mollusca of Wisconsin, two forms of *Stagnicola* have been observed which appear to need recognition as varieties. These are described below.

STAGNICOLA EMARGINATA VILASENSIS NOV. var.

Shell large, elongate-ovate to almost globular in form, inflated, thin to rather thick; periostracum brownish to whitish horn color; surface dull, sculpture of coarse growth lines and well-developed spiral lines; heavy spiral ridges are present on

¹Contribution from Museum of Natural History, University of Illinois, No. 41.

the body whorl of some specimens; whorls $5\frac{1}{2}$, convex, more or less tumid, the body whorl usually more or less flattened, almost straight in some individuals, with a pronounced shoulder; spire elongated or very much flattened, varying from as long as the aperture to one-fifth its length; sutures deeply impressed; aperture large, expanded, often patulous, long-ovate to roundly-ovate, from one-half to four-fifths the length of the shell, rounded below, somewhat angular above, yellowish-brown or purplish within; peristome sharp, thin; inner lip very wide, broadly reflexed over the umbilical region, leaving a rather widely open umbilical chink; there is a wide columellar callus spreading well over this region which is frequently raised from the body whorl, causing the aperture to become entire; not infrequently the inner lip is strongly curved to the left, producing a pseudo-canal; there is a marked columellar plait.

L. 35.0; W. 28.0; Ap. L. 27.0; W. 16.5 mm. Type. U. of Ill., Z21678.

L. 33.0; W. 27.0; Ap. L. 25.0; W. 15.3 mm. Paratype. U. of Ill., Z21679.

L. 38.0; W. 25.5; Ap. L. 25.0; W. 15.2 mm. Paratype. U. of Ill., Za1679.

L. 32.5; W. 20.0; Ap. L. 20.0; W. 12.0 mm. Paratype. U. of Ill., Z21679.

L. 29.0; W. 22.0; Ap. L. 19.5; W. 12.0 mm. Paratype. U. of Ill., Z21679.

Type locality: Big Muskallonge Lake, Vilas Co., Wis. Types: Museum Natural History, U. Ill., No. Z21678, Z21679; Acad. Nat. Sci. Phila., No. 141864.

Remarks: This fine shell, though at first sight apparently quite a distinct species, is doubtless an extreme variation of *Stagnicola emarginata*. Its nearest relative appears to be *mighelsi* Binney, from which it differs in its more angular body whorl which forms a distinct shoulder, its broader, flatter spire and usually deeper sutures, and its wider and rounder aperture, which is more patulous. The flattening of the body whorl in the majority of specimens examined is peculiar. There are long-spired examples which recall typical *emarginata*, small specimens recalling *angulata*, and some rounded specimens re-

calling *wisconsinensis*. It may be a variation produced by isolation, as Big Muskallonge Lake is without an outlet at the present time. Typical *emarginata* occurs in Plum Lake, about five miles east of Big Muskallonge Lake, but these are normal, resembling the Maine specimens. The new variety also occurs in Pelican Lake, Crow Wing Co., Minnesota, indicating a wide range. These were collected many years ago by Dr. W. A. Nason and are now in his collection in the University museum (No. Z21681). The new variety appears to be the maximum variation in the *emarginata* group, rivaled only by some extreme examples of *mighelsi*.

STAGNICOLA PALUSTRIS WYOMINGENSIS NOV. VAR.

Shell differing from typical *palustris* in being more scalariform, having a more obese body whorl, a longer and more acute spire, which is sharply pyramidal, and with more tightly coiled whorls, the spire being longer than the aperture, which is rounder, not elongate-ovate. There is usually a distinct umbilical chink, which is absent or but feebly developed in typical *palustris*.

L. 19.5; W. 9.0; Ap. L. 9.0; W. 4.5 mm. Type. U. of Ill., Z21682.

L. 19.5; W. 9.0; Ap. L. 9.0; W. 4.2 mm. Paratype. U. of Ill., Z21683.

L. 19.0; W. 9.5; Ap. L. 8.8; W. 4.5 mm. Paratype. U. of Ill., Z21683.

L. 18.5; W. 7.3; Ap. L. 7.5; W. 3.8 mm. Paratype. U. of Ill., Z21683.

Type locality: Slough 10 miles south of Lander, Wyoming. Types: University Museum, Z21682, Z21683; Acad. Nat. Sci. Phila., 141866; University Colorado Museum.

Remarks: This variety of the wide-spread *palustris* appears to differ sufficiently from the type for recognition. Its acute spire, short, rounded aperture and well rounded whorls will distinguish it. It has been identified as *proxima* Lea, but that species, while having a long, pointed spire, has flat-sided whorls and shallower sutures. The type of Lea's species has been examined for comparison, and it is quite different. The radulae

of the two forms (*proxima* and *palustris*) should be examined as these may show differences not indicated in the shells.

The new variety will probably be found widely distributed in the mountain region of Wyoming, Utah, Montana and Colorado. Apparently the same form has been submitted for identification by Dr. J. C. Needham, of Cornell University, who collected the specimens near Wellsville, Utah.

NEW VARIETIES OF *HELISOMA ANTROSA* FROM WISCONSIN AND MINNESOTA¹

BY FRANK C. BAKER

HELISOMA ANTROSA CAHNI var. nov.

Differing from *antrosa portagensis* F. C. Baker in being very much larger, the aperture relatively wider, not ear-shaped, the upper part not being as acutely elevated above the upper angle of the whorl, the dorsal and ventral carinae of the whorls not acutely cord-like, and the height averaging greater (8-10 per cent.) than in *portagensis*. The shell is thinner than in the latter variety. Spiral sculpture marked.

H. 12.5; D. 18.0; Ap. H. 12.0; D. 7.0 mm. Type.

H. 12.0; D. 18.5; Ap. H. 11.5; D. 6.5 mm. Paratype.

H. 11.0; D. 15.0; Ap. H. 10.5; D. 6.0 mm. Paratype.

TYPE LOCALITY: Big Muskallonge Lake, Vilas Co., Wis.
 TYPES: Univ. Ill., No. Z21124; Paratypes, Acad. Nat. Sci. Phila., No. 141567.

This variety was at first thought to be a variation of *portagensis*, described from Portage Lake, Maine (NAUT. XXII, p. 45; XXIII, p. 8, pl. I, fig. 9), but its normally larger size, differently shaped aperture, and greater relative height seem to mark it as another variety of this wide-spread species. Occasional immature specimens have the upper part of the whorl acutely raised above the dorsal angle of the whorl, but no fully

¹Contribution from Museum of Natural History, University of Illinois, No. 36.